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# The Imperial Forestry Institute

## University of Oxford

EIGHTEENTH ANNUAL REPORT

1941—42

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## EIGHTEENTH ANNUAL REPORT OF THE IMPERIAL FORESTRY INSTITUTE ACADEMIC YEAR, 1941—42

The number of students attending the Institute courses shewed a further reduction as compared with previous years, but all possible stages were represented, and the full syllabus had to be covered in lectures, demonstrations and field instruction. There were six Colonial Forestry Scholars, all Honours Graduates in Biological Sciences except one, who went out to Sierra Leone after one term; one first year undergraduate student, and one second year student; there was one student for the final examination under the older Statute which was extended for a further year to meet his special case, and one candidate for the Diploma in Forestry; also two candidates for B.Sc., of whom one was in residence and the other working abroad.

2. This year it was known beforehand that the Colonial Scholars could not be released from the Armed Forces before Christmas. The courses were accordingly mostly begun in the Hilary Term, which was extended by two weeks before and two weeks after the University term, and the summer term was similarly opened nearly two weeks in advance. As these students also attended a practical course in field geology in the Isle of Arran, they had no Easter vacation. Once again, to meet the requirements of the University Statute, the Professor of Geology held a special examination for students entering for Part I of the Final Examination in Forestry at the end of Trinity Term.

3. The impossibility of visiting continental forests or travelling extensively in this country again necessitated the substitution of visits to selected woods in reach of Oxford for the demonstration of the results of systematic forest management. The New Forest is perhaps of most value for instructional purposes, but even there, the lack of records of past treatment and of figures for growing stock, increment and fellings detracts very greatly from its value. There is ample material here and in other Forestry Commission forests, and in private woodlands, for demonstration of silviculture and mensuration, but extremely

little for forest management, one of the most important parts of a forester's training. Mention is made later of the excursions and tours made during the year. The Institute is much indebted to the Forestry Commission, the Director of the Forest Products Research Laboratory, and private owners of woodlands, sawmills and factories for their much appreciated assistance.

4. There were no major changes in the staff during the year, but Mr. P. S. Spokes left at its end on the expiry of the period of his special appointment for work on the reclassification of the Library and reference system. The work which Mr. Spokes has done at the Institute over a number of years, mainly in connection with this side of its activities, has been of great and lasting value. The magnitude of the task he undertook is indicated by the fact that 12,500 reference slips were prepared for the literature of the year under review alone. The Government of the Gold Coast agreed to the extension of Mr. Foggie's period of secondment for a further year, till July 1943.

5. The University permitted the Professor to undertake part-time service from December 15th, 1941, in the Home Timber Production Department of the Ministry of Supply to organise and supervise the carrying out of a census of the standing timber resources of England and Wales, work in which one of his chief assistants was a graduate of the Oxford School of Forestry now serving with the Royal Engineers. Mr. Brenan's services were also temporarily placed at the disposal of the same Ministry for a survey of an important munitions material during May and June. Two junior members of the Staff left for whole-time war work and were not replaced, but their departure necessitated the appointment of a caretaker.

6. Colonel Lloyd, Lecturer in Forest Engineering, continues to be greatly missed, as under present conditions the Utilization aspect of Forestry is more than usually important and it has not proved possible to find any satisfactory substitute for the practical courses he was giving at the Institute before he left to take on his present important duties with the Forestry Companies of the Royal Engineers.

7. Mr. Day, Dr. Jones and Mr. Foggie all gave most of their time during the Long Vacation 1941 to continuing research work in war-felling areas, and subsequently to compiling the field data collected by themselves round Oxford, Shrewsbury and Bristol, and dealing with the general examination and compilation of the data sent in by all the seven parties working in England and Wales and the three in Scotland. The Professor continued the general administration of this project which was undertaken on behalf of the Forestry Commission and financed by them, and he also took a share in the field work. Mr. Clarke

of the School of Rural Economy co-operated in the field and office work on the soils, and Mrs. Moore of Reading University was also employed for several weeks, part-time, on an analysis of the field data. Difficulty in finding a soil scientist free to devote the necessary time to the final interpretation of the field data, and delays in receiving some of the party reports due to stress of other duties have resulted in considerable delay in completing the general report on this project.

8. At a meeting of the Curators of the University Chest on June 2nd, 1942, it was decided to have the quantity surveying for the new forestry building prepared by the architects, so that construction could be begun as soon as conditions permit after the cessation of hostilities. The Rhodes Trustees have approved the proposed front elevation as required under the conditions of their promised contribution. The Pilgrim Trustees agreed to continue carrying their promised grant on their books in view of the fact that no further delay in building is contemplated than is necessitated by the war.

## SILVICULTURE.

Dr. E. W. Jones continued in charge of this section and gave courses of lectures and demonstrations covering the new syllabus for both first and second year work. He was present on the excursions to various woods in reach of Oxford and during the Long Vacation working plan field work in the New Forest, Forest of Dean and Chilterns.

During the Long Vacation 1941, he devoted most of his time to field work in connection with the collection of silvicultural data in areas in which war fellings were taking place, being himself the leader of a party working in Shropshire and North Wales. Throughout the year, considerable work has been done on the analysis of the mass of ecological data collected by the ten field parties engaged on the project.

Mr. McKitterick examined some of the sections of conifer stems collected with a view to correlation of ring structure and weather conditions.

Two visits have been made by Dr. Jones at the invitation of the Forestry Commission to Bishop Wood near Selby, Yorks, where development of hardwood plantations is proving disappointingly slow. A tentative classification of soil types and ground vegetation types was made, with suggestions regarding silviculture and further experimental work needed. This instructive area was also briefly inspected by the Professor.

During the practical work with students, further studies were made on the natural regeneration of Douglas fir, Scots pine and

oak in the New Forest, and the distribution of sessile and pedunculate oaks in the High Meadow Woods, Gloucester.

Mr. R. G. Sanzen-Baker, Forestry Commission Research Officer for England and Wales, continued to be attached to the Institute. Kennington Nursery was maintained for experimental work which covered a variety of problems, in some of which the Institute staff co-operated. The investigations included (i) the preparation of composts from bracken, hop waste and sawdust and the value of these composts for maintaining nursery soil fertility, (ii) vegetative propagation of Norway spruce in view of shortage of seed supplies, (iii) seed storage, notably of beech, and (iv) seed covering materials, continuing investigations which have been in progress for some years. The nursery and the experiments in progress in it were as usual useful for instructional purposes, demonstrations being arranged by the Forestry Commission Staff when required.

## MENSURATION AND MANAGEMENT.

The syllabus prescribed for the first and second years of the Degree course was covered by Mr. A. Foggie in lectures and practical work in Bagley, though a real start could only be made on Part I in the Hilary Term when the Colonial Scholars arrived. Practical work for the second year students included a fortnight in the High Meadow Woods finishing off the field work for their working plans. The first year class spent four weeks in these woods collecting the necessary data for a working plan of an area selected for the purpose, and a week in the Hampden Woods in the Chilterns, mainly on yield calculation. As usual, the day excursions during the summer term were utilised for demonstration of management problems, the visits to the Woburn Estate, the beech woods of the Cotswolds, Windsor Great Forest and Alice Holt Forest being particularly instructive.

A sample plot of Norway spruce in the Bagley experimental plantations received its prescribed periodic measurement in the course of instructional work. Mr. Foggie worked in the field during the summer vacation with the University research parties working in war-felling areas from Oxford and Bristol, and undertook various computations in connection with this project, notably the correlation of Mean Height and Top Height for several coniferous species, and that of crown width with girth for Scots pine. A start was also made on the preparation of a stand table for larch. The relationships of total to timber height, and of girth at breast height to girth at half timber height for the common conifers were also determined, correlations being close enough to render estimates based on them quite possible for large samples.

## STATISTICS.

Experience during the past two years has shown that the teaching of statistics must be begun along very simple lines if students new to the subject and heavily engaged with other work are to make any real progress. The course given by Mr. W. R. Day during this year was simplified bearing this in mind. It has now been decided that the teaching of statistical method during the first year shall be confined to those elements needed in connection with Mensuration and any further necessary studies will thus be relegated to a later stage.

## SOIL SCIENCE.

Mr. Morison, Reader in Soil Science, on his return to the University gave a special course of lectures for the Forestry students. Mr. G. R. Clarke also gave lectures and field demonstrations under the standing arrangement with the School of Rural Economy. This included several days' field work in the High Meadow Woods, where soil surveying and mapping were done. Mr. Clarke also collaborated with the special research teams studying woods under war fellings for the Forestry Commission, and he and Mr. Morison devoted considerable time to the analysis and interpretation of the field data collected from all parties.

## TROPICAL FOREST BOTANY.

Mr. J. P. M. Brenan continued his work on the annotated check list for Tanganyika Territory, and had covered about two-thirds of the task by the end of the period under report. A small collection made by Mr. Wigg was named concurrently. Mr. Brenan spent a week at the Royal Botanic Gardens, Kew, examining type specimens and other material to clear up doubtful points. Progress has been facilitated by the mounting and incorporation in the Forest Herbarium of much unmounted material from the Territory: about 800 specimens were thus dealt with. Mr. Brenan was released for about seven weeks during the early summer to help with a survey for the Ministry of Supply.

The Forest Herbarium remains at the Institute, with Mr. A. C. Hoyle as Curator. Instruction in Systematic Botany and Ecology of tropical forests was given as usual, and numerous identifications were made in answer to enquiries.

## FOREST PATHOLOGY.

There has been no change in the staff of this Section, with Mr. W. R. Day in charge and Mr. F. H. Jones as laboratory

and field assistant. Much of the time not taken up with lectures and demonstration was devoted to field work in felling areas and the analysis of the data collected by all the collaborating parties on the occurrence of butt rot and its relation to site factors and other pathological conditions.

Work on the silviculture of European larch was continued in collaboration with the Research Officer of the Forestry Commission, with special reference to the poor results obtained with this species in many plantations. It is hoped to prepare a report during the coming year.

Various enquiries have been received concerning pathological conditions which have attracted attention, among which severe frost damage to *Chamaecyparis lawsoniana, Thuja plicata,* and Cricket-bat Willow and aspen may be mentioned as indicating once again the importance of frost as a cause of injury and death in this country; a case of severe die-back of Corsican pine apparently directly due to this same cause is under investigation.

## FOREST ENTOMOLOGY.

Dr. Chrystal gave courses in forest entomology to first and second year students, as well as a short introductory course in general zoology for those needing it. Mr. J. M. B. Brown, who was employed at the Institute on entomological research and was working mainly on chafer problems for the Forestry Commission, has left to take up other Commission work more directly connected with the war effort and preparation for immediate post-war reconstruction activities.

## WOOD STRUCTURE.

Dr. L. Chalk, who continued in charge of this Section, gave the courses of instruction required in the first and second year's work under the new syllabus. He also supervised the work of a Diploma student.

Very much more satisfactory progress was made with the research on the systematic anatomy of dicotyledonous woods planned in collaboration with Dr. C. R. Metcalfe of the Royal Botanic Gardens, Kew, and several more families were completed.

Approximately a hundred identifications were carried out during the year, most of these being undertaken at the request of the Colonial Forest Resources Development Department.

Very few additions were made to the wood collection.

## ECONOMICS.

Mr. Day lectured in this important subject, which needs more attention than can be given to it with the present staff. The general lack of any detailed accounts of expenditure and income for establishment, maintenance and management of woods and plantations in this country is deplorable and a serious handicap from the point of view of training students in the economic aspects of forestry. It is hoped to get such accounts compiled and maintained for some of the plantations in Bagley Wood.

## FOREST UTILIZATION AND ENGINEERING.

Dr. Chalk undertook the teaching in Forest Utilization in the continued absence of Colonel A. H. Lloyd. In view of the great immediate importance of timber extraction and saw milling under war conditions, special attention was devoted to the practical aspect in these fields during the excursions and vacation tours. Visits were again made to the Wheatley sawmill, to mills operated by Forestry Companies of the Royal Engineers with Colonel Lloyd, and to mills in the Chilterns and Cotswolds. More time than usual was also spent in the sawmill and wood working section of the Forest Products Research Laboratory at Princes Risborough, where the Director kindly gave these extra facilities.

The excursions included visits to the saw-milling and wood working factory of Messrs. Workman in the Cotswolds and the Wood Distillation plant of Messrs. Goldsworthy in the Forest of Dean, whilst an exceptionally instructive visit was paid at the end of the Chilterns tour to the factory of Messrs. Birch at High Wycombe.

Mr. O. H. Chilton, Reader in Surveying, once again kindly undertook the teaching in Forest Engineering and acted as Assessor in the examination in this subject.

The Second Year Students carried out a road alignment in Bagley Wood under Mr. A. Foggie.

## SURVEYING.

Mr. O. H. Chilton gave the prescribed course in surveying and additional revision work to one student.

## LIBRARY.

Accessions during the year numbered 1,837; of these 41 were books and 905 issues of periodicals, the remainder comprising reports, bulletins, pamphlets and working plans. The

Imperial Forestry Bureau provided 181 items. Three essential but costly books were purchased by means of the Brooks Bequest, a fund which, though small, proves year by year of inestimable and imaginative utility. Again the proportion of material arriving safely from overseas was remarkably high. So far as possible our exchange relationship with other institutions was kept in being. The number of periodicals regularly received was 96, compared with 122 last year: stoppages were to some extent offset by new periodicals, including some from the South American States. Some useful literature is also expected as a result of closer contact with Russian scientific institutions.

Loans (exclusive of literature consulted in the library) totalled 3,100: 1,410 to staff, 986 to the Bureau, 380 to students and 224 to outside borrowers in person or by post. This figure is considerably higher than that for last year, as is that for the number of readers in the library, 1,823, including 706 student periods and 220 visitors. The pressure on space was naturally extreme at times. Sales in the library came to £8.

A large number of Forest Administration Reports from different parts of the Empire and elsewhere (*e.g.* the Philippines) were bound; many of these Reports are old and irreplaceable, and it was essential to protect them from the ravages of time. Twenty-seven sets of working plans were also bound, in addition to the usual current binding and repairing. One serious gap in our records has to some extent been made good by the acquisition of a number of working plans of forests in England and Scotland; these are chiefly in typescript, with maps and graphs, and have been bound.

Reclassification to conform with the system in use for all referencing and abstracting work in the Imperial Forestry Bureau has been completed, but the books have not yet been rearranged.

Reclassification of the pre-1941 references to literature has proceeded steadily. All the 1940 references have been typed on slips, many are already in the catalogue and the rest are in course of being pasted on to cards and filed. Slips are ready for about one-half of the 1938 and 1939 references; 1934-37 references are ready for typing, as also the pre-1933 references under the Silviculture, Management and Mensuration heads. Mr. Spokes was unable to complete the revision of the pre-1933 references under other heads, which remain to be dealt with when staff is available. Additional typing assistance has been employed.

In making acknowledgments for voluntary assistance and for gifts, the Librarian mentions particularly Miss Dorothy

Shepherd (now on the staff of the British Council), who gave a considerable amount of time to listing and indexing publications for sale and to preparing the Reports Section for binding; Mrs. Burtt Davy, whose gift of her husband's working copy of *Flora Capensis* in ten volumes is a most valuable acquisition, and Dr. Chrystal for his gift of a quantity of useful and scarce books chiefly on entomology. Other donors include Messrs. R. O. and R. O. Williams, Trinidad; the American Embassy, London; the Director, Forest Products Research Laboratory, Princes Risborough; the Dean, Faculty of Agriculture and Horticulture, University of Reading; Dr. E. N. Munns, United States Forest Service, Washington, D.C.; the American Geographical Society, New York; the Librarian, School of Agriculture, Cambridge; the Sherardian Professor of Botany, University of Oxford; the Librarian and Dr. Cunliffe, School of Rural Economy, Oxford; Mr. A. F. Broun; the Forest Research Institute, Dehra Dun; the Government of Assam; the High Commissioner for India; Dr. Chalk and Mr. Kissin.

## FINANCE

The audited accounts of the Department will be published in the *Oxford University Gazette*. The following is a summary of income and expenditure for the year:—

### General Account

*Income*: Forestry Commission, £2,784; Colonies, £4,986; Dominions, Burma and others, £450; Fees, £114; other receipts, £83. Total Income, £8,417.

*Expenditure*: Staff salaries and pension contributions, £6,844; Instructional Supplies, £87; Travelling, £186; Administrative and Miscellaneous Expenses, £865; Instalment on Loan from Capital Account, £50. Total Expenditure, £8,032. (Income exceeds expenditure by £385.)

H. G. Champion,
*Professor of Forestry*.
(on behalf of the Committee for Forestry).

# APPENDIX I

## LIST OF STAFF

### I. STAFF ENGAGED IN INSTRUCTION AND RESEARCH

PROFESSOR H. G. CHAMPION, M.A. (Oxon.), Fellow of St. John's College. Tropical Forestry, Silviculture and Policy.

*L. CHALK, M.A., D.Phil. (Oxon.), University College. Wood Structure and Properties.

*W. R. DAY, B.Sc., M.A. (Oxon.), Exeter College. Pathology, Forest Hygiene, Economics and Statistics.

*A. H. LLOYD, M.C., M.A. (Oxon.), Exeter College. Forest Engineering and Utilization. (Absent on military duty from 1st September, 1939.)

A. FOGGIE, B.Sc. (Edin.). Forest Management and Mensuration.

E. W. JONES, M.A. (Oxon.), Ph.D. (Cantab.), Magdalen College. Silviculture and Ecology.

J. P. M. BRENNAN, B.A. (Oxon.), Brasenose College. Forest Botany.

### II. STAFF ENGAGED SOLELY IN RESEARCH FOR THE FORESTRY COMMISSION

R. G. SANZEN-BAKER, B.Sc. (Edin.), Forestry Commission Research Officer for England and Wales. Silviculture.

### III. STAFF OF OTHER UNIVERSITY DEPARTMENTS ASSISTING IN INSTRUCTIONAL WORK

R. N. CHRYSTAL, D.Sc. (Edin.), Hon. M.A. (Oxon.). Forest Zoology.

A. C. HOYLE, B.Sc., M.A. (Oxon.), Pembroke College. Forest Botany and Ecology.

O. H. CHILTON, M.A., M.Sc. (Lond.). Reader in Surveying.

C. G. T. MORISON, M.A. (Oxon.). University Reader in Soil Science. Student of Christ Church. Soil Science.

G. R. CLARKE, B.Sc., M.A. (Oxon.). Demonstrator in Soil Science, School of Rural Economy. Oriel College. Soil Science.

### IV. OTHER STAFF

Secretary-Accountant: Miss L. M. BISHOP.
Assistant Secretary: Miss H. M. EDWARDS.
Librarian: Miss G. GUINEY.
Assistant Librarian: Miss I. S. T. ASPIN, M.A. (Oxon.).

* These members of the Staff have the status of University Demonstrators, having been reappointed as such with effect from the following dates: Mr. Lloyd, 1/8/39; the remainder, 1/8/41.